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Taxonomy & Inventories

New record of the genus *Amblypalpus* Mitrofanov & Strunkova (Acari, Prostigmata, Tenuipalpidae) with description of a new species from Saudi Arabia

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Abstract

Background

Amblypalpus Mitrofanov & Strunkova (Prostigmata, Tenuipalpidae) is a small genus in the family Tenuipalpidae, representing five species reported from Iran, Tajikistan and South Africa. This study describes a new species of *Amblypalpus*, A. pisoniae **sp. nov**., reported from the south-western region (Jazan) of Saudi Arabia (SA).

New information

The genus *Amblypalpus* Mitrofanov & Strunkova is reported for the first time from SA, collected from *Pisonia* sp. (Nyctaginaceae) with a new species, *A. pisoniae* **sp. nov.** The new species is described and illustrated, based on females and males. Additionally, the diagnosis of the genus *Amblypalpus* is updated.

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Keywords

diagnosis, tarsal claw, taxonomy, morphology, diversity, *Pisonia* sp.

Introduction

The genus *Amblypalpus* Mitrofanov & Strunkova (Acari, Prostigmata, Tenuipalpidae) was erected by Mitrofanov and Strunkova (1978) with *A. narsikulovi* Mitrofanov & Strunkova as type species and comprises five species namely; *A. iraniensis* Farzan, Asadi &Ueckermann, *A. thymus* Farzan, Asadi and Ueckermann (from Iran), *A. masakii* (Ehara &Ueckermann), *A. thomissus* (Meyer) (from South Africa) and *A. narsikulovi* Mitrofanov & Strunkova (from Tajikistan) (Mitrofanov and Strunkova 1978, Meyer 1979, Mesa et al. 2009, Farzan et al. 2013).

Ehara and Ueckermann (2003) described the species *Tenuipalpus masakii*; later, Mesa et al. (2009) transferred this species from *Tenuipalpus* to *Amblypalpus*. Recently, Farzan et al. (2013) reviewed and updated the diagnosis of two genera, *Priscapalpus* DeLeon, 1961 and *Amblypalpus* and transferred *P. thomissus* Meyer, 1979, to *Amblypalpus*. Later, Castro et al. (2017) developed the key to known species of the genus *Amblypalpus*. Farzan et al. (2013) reported in the genus *Amblypalpus* diagnosis the presence of uncinate tarsal claws and pad-like empodium. In contrast, all species of this genus have tarsal claw and empodium, pad-like. Recently, Beard and Seeman (2025) divided *Amblypalpus* into two groups: *Amblypalpus* sensu stricto, which includes only one species, *A. narsikulovi* and *Amblypalpus* sensu lato, which consists of the other four species.

In the present study, the genus *Amblypalpus* is reported for the first time from Saudi Arabia (SA) with a description of a new species, *A. pisoniae* **sp. nov.**, found on *Pisonia* sp. (Nyctaginaceae) from south-western (Jazan), SA. Additionally, the diagnosis of *Amblypalpus* has been updated.

Materials and methods

Different wild vegetations in the southern regions of SA were comprehensively surveyed from January to July 2024 to collect mites. The mite specimens were collected by shaking the foliage parts of the plant over white sheets and preserved in small vials containing 70% ethanol. Specimens were examined under a phase-contrast microscope (DM2500, Leica, Wetzlar, Germany). The species was identified by following the published key (Castro et al. 2017). The images of different body parts were captured using an auto-montage software system (Syncroscopy, Cambridge, UK) attached to a phase contrast microscope (DM2500, Leica, Germany). These images were used as templates and illustrated by Adobe Illustrator software (Adobe Systems Inc., San Jose, CA, USA). The morphological terminology used in the new species description follows Lindquist (1985) and Mesa et al. (2009). All measurements are given in micrometres (µm). The holotype

measurements for the morphological features are provided as a single value followed by those of the paratype in parentheses. The values were rounded off to the nearest integer and regarded as the length of the morphological traits unless otherwise specified, i.e. number of setae. Body dimensions measured as v_2–h_1 (length) and sc_2–sc_2 (width). The type specimens of the new species have been deposited at the King Saud University Museum of Arthropods (KSMA, Acarology section), Department of Plant Protection, College of Food and Agriculture Sciences, King Saud University, Riyadh, Saudi Arabia.

Taxon treatment

Amblypalpus pisoniae Elgoni, Mirza & Alatawi, sp. nov.

- ZooBank 7B4C92BB-6008-4498-BCD7-2E0ABBF57725

Materials

Holotype:

a. scientificName: *Amblypalpus pisoniae*; kingdom: Animalia; phylum: Arthropoda; class: Arachnida; order: Prostigmata; family: Tenuipalpidae; genus: *Amblypalpus*; country: Saudi Arabia; stateProvince: Jazan; locality: Ayban; verbatimCoordinates: 17°16.320'N 43°2.629'E; decimalLatitude: 17.272; decimalLongitude: 43.04382; georeferenceProtocol: GPS; samplingProtocol: shaking plant foliage; eventDate: 25/2/2024; habitat: *Pisonia* spp.; individualCount: 1; sex: Female; lifeStage: adult; catalogNumber: KSMAAS24-Ten-Amb-H; recordedBy: N.A. Elgoni; identifiedBy: Nasreldeen Ahmed Elgoni; dateIdentified: 2024; language: en; collectionCode: Mites; basisOfRecord: Slide Mounted Specimen; occurrenceID: 3D1A726B-FBAD-5A6D-AA95-30414EBF42DE

Paratypes:

a. scientificName: *Amblypalpus pisoniae*; kingdom: Animalia; phylum: Arthropoda; class: Arachnida; order: Prostigmata; family: Tenuipalpidae; genus: *Amblypalpus*; country: Saudi Arabia; stateProvince: Jazan; locality: Ayban; verbatimCoordinates: 17°16.320'N 43°2.629'E; decimalLatitude: 17.272; decimalLongitude: 43.04382; georeferenceProtocol: GPS; samplingProtocol: shaking plant foliage; eventDate: 25/2/2024; habitat: *Pisonia* spp.; individualCount: 1; sex: Female; lifeStage: adult; catalogNumber: KSMAAS24-Ten-Amb-P1; recordedBy: N.A. Elgoni; identifiedBy: Nasreldeen Ahmed Elgoni; dateIdentified: 2024; language: en; collectionCode: Mites; basisOfRecord: Slide Mounted Specimen; occurrenceID: 6B18ACD0-D5E7-5FAF-99AA-48EE8F0D8697

b. scientificName: *Amblypalpus pisoniae*; kingdom: Animalia; phylum: Arthropoda; class: Arachnida; order: Prostigmata; family: Tenuipalpidae; genus: *Amblypalpus*; country: Saudi Arabia; stateProvince: Jazan; locality: Ayban; verbatimCoordinates: 17°16.320'N 43°2.629'E; decimalLatitude: 17.272; decimalLongitude: 43.04382; georeferenceProtocol: GPS; samplingProtocol: shaking plant foliage; eventDate: 25/2/2024; habitat: *Pisonia* spp.; individualCount: 1; sex: Male; lifeStage: adult; catalogNumber: KSMAAS24-Ten-Amb-P2; recordedBy: N.A. Elgoni; identifiedBy: Nasreldeen Ahmed Elgoni; dateIdentified: 2024; language: en; collectionCode: Mites; basisOfRecord: Slide Mounted Specimen; occurrenceID: DAB48C65-2FAE-52E8-B35B-DFF40059C487

c. scientificName: *Amblypalpus pisoniae*; kingdom: Animalia; phylum: Arthropoda; class: Arachnida; order: Prostigmata; family: Tenuipalpidae; genus: *Amblypalpus*; country: Saudi Arabia; stateProvince: Jazan; locality: Ayban; verbatimCoordinates: 17°16.320'N

43°2.629'E; decimalLatitude: 17.272; decimalLongitude: 43.04382; georeferenceProtocol: GPS; samplingProtocol: shaking plant foliage; eventDate: 25/2/2024; habitat: *Pisonia* spp.; individualCount: 1; sex: Male; lifeStage: adult; catalogNumber: KSMAAS24-Ten-Amb-P3; recordedBy: N.A. Elgoni; identifiedBy: Nasreldeen Ahmed Elgoni; dateIdentified: 2024; language: en; collectionCode: Mites; basisOfRecord: Slide Mounted Specimen; occurrenceID: E220106C-5802-51DE-8AD2-605116DDF738

Description

Description of female (n = 2)

Dorsum (Fig. 1a and b). Body oval in shape. Length of body from setae v_2–h_1 157 (159); width from sc_2–sc_2 85 (86). Propodosoma anteriorly deeply notched 22 (17), with two long medial lobes and without lateral lobes. Median area of propodosoma with irregular lines, lateral area with irregular longitudinal striae; first and second pairs of propodosomal setae v_2 and sc_1 subequal in length and longer than third pair sc_2. Opisthosoma with irregular, transverse, longitudinal striae, opisthosoma with one pair of pore posterior setae d_3. Lengths of setae: v_2 14 (13), sc_1 15 (18), sc_2 8 (11), c_1 15 (8), c_3 8 (7), d_1 7 (5), d_3 9 (11), e_1 11 (10), f_3 9 (10), h_1 7(8), h_2 9 (8). Distances between setae: v_2–v_2 28 (24), sc_1–sc_1 54 (57), c_1–c_1 27 (26), c_3–c_3 95 (103), d_1–d_1 5 (8), d_3–d_3 82 (88), e_1–e_1 6 (8), f_3–f_3 55 (56), h_1–h_1 14 (12), h_2–h_2 34 (30). All dorsal setae lanceolate serrate.

Venter (Fig. 2a-d). Ventral cuticle with transverse striae medially, longitudinal striae laterally; genital and ventral region fused into single plate with transverse striae; lateral area with longitudinal striae; three pairs of intercoxal setae (1*a*, 3*a*, 4*a*), with 1*a* long and 4*a* longer than 3*a*. Coxa I with 3 setae (1b_1, 1b_2, 1*c*); two pairs of genital setae ($g_{1–2}$) present; two pairs of anal setae ($ps_{2–3}$) present. Spermatheca (Fig. 2d). Spermathecal duct long, narrow and with two bulbs. Lengths of setae: 1*a* 44 (41), 1b_1 14 (15), 1b_2 33 (30), 1*c* 16 (13), 2*b* 32 (31), 2*c* 14 (13), 3*a* 16 (16), 3*b* 18 (18), 4*a* 33 (34), 4*b* 19 (16), *ag* 13 (14), g_1 10 (11), g_2 11 (12), ps_2 12 (13), ps_3 12 (11). All ventral setae smooth.

Gnathosoma. Ventral setae *m* 11 (10); distance between setae *m-m* 10 (13). Palp (Fig. 3a). Three segments; terminal segment with single eupathidium setae 10 (9), second segment with one dorsal seta.

Legs (Fig. 3b-e): Legs measured from trochanter to tarsus; leg I 84 (87); leg II 78 (75; leg III 72 (69) and leg IV 85 (78); Number of setae on leg I-IV (from coxa to tarsus, solenidion in parenthesis). Setal formula for legs I-IV: coxae 3–2–1–1; trochanters 1–1–2–1; femora 4–4–2–1; genua 3–3–1–0; tibiae 4–4–3–3; tarsi 8(1)–8(1)–5–5. Tarsal setae are unusually elongate, especially the unguinal setae *u'*–*u''*, companion setae *ft* '' and the proral eupathida *p'ζ*–*pζ''*. Tarsal claws pad-like.

Description of male (n = 2)

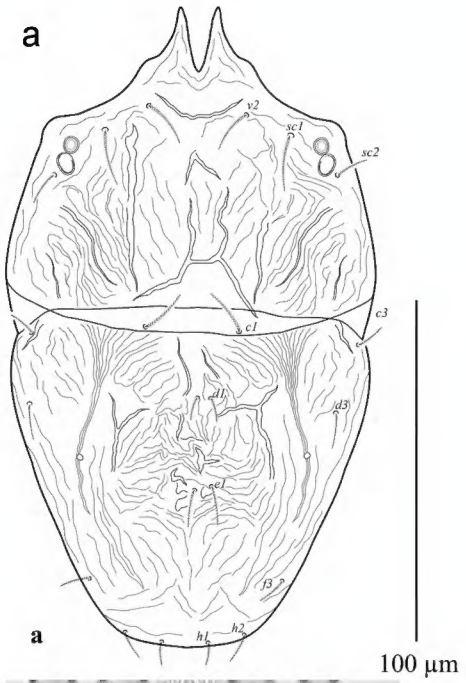


Figure 1.

Amblypalpus pisoniae sp. nov., female, dorsum:

a: *Amblypalpus pisoniae* sp. nov., female, dorsum (Illustration); doi

b: *Amblypalpus pisoniae* sp. nov., female, dorsum (Photo). doi

Dorsum (Fig. 4a, b). Propodosoma wider than opisthosoma. Length of body from setae v_2-h_1 133–139; width from sc_2-sc_2 75–77. Propodosoma anteriorly deeply notched 11–13, with two long medial lobes and without lateral lobes. Median area of propodosoma with irregular lines, lateral area with irregular longitudinal striae, lateral and sublateral area of propodosoma with irregular longitudinal striae; first and second pairs of propodosomal setae v_2 and sc_1 longer than third pair sc_2. Opisthosoma with two plates; with irregular, longitudinal striae, opisthosoma with one pair of pore posterior setae d_3. Lengths of setae: v_2 18–23, sc_1 25–26, sc_2 13–15, c_1 18–21, c_3 10–11, d_1 5–6, d_3 29–33, e_1 16–18, f_3 15–16, h_1 6–7, h_2 8–10. Distances between setae: v_2–v_2 25–26, sc_1–sc_1 49–50, c_1–c_1 26–28, c_3–c_3 80–82, d_1–d_1 15–16, d_3–d_3 62–65, e_1–e_1 5–6, f_3–f_3 44–46, h_1–h_1 5–7, h_2–h_2 26–28. All dorsal setae lanceolate serrate.

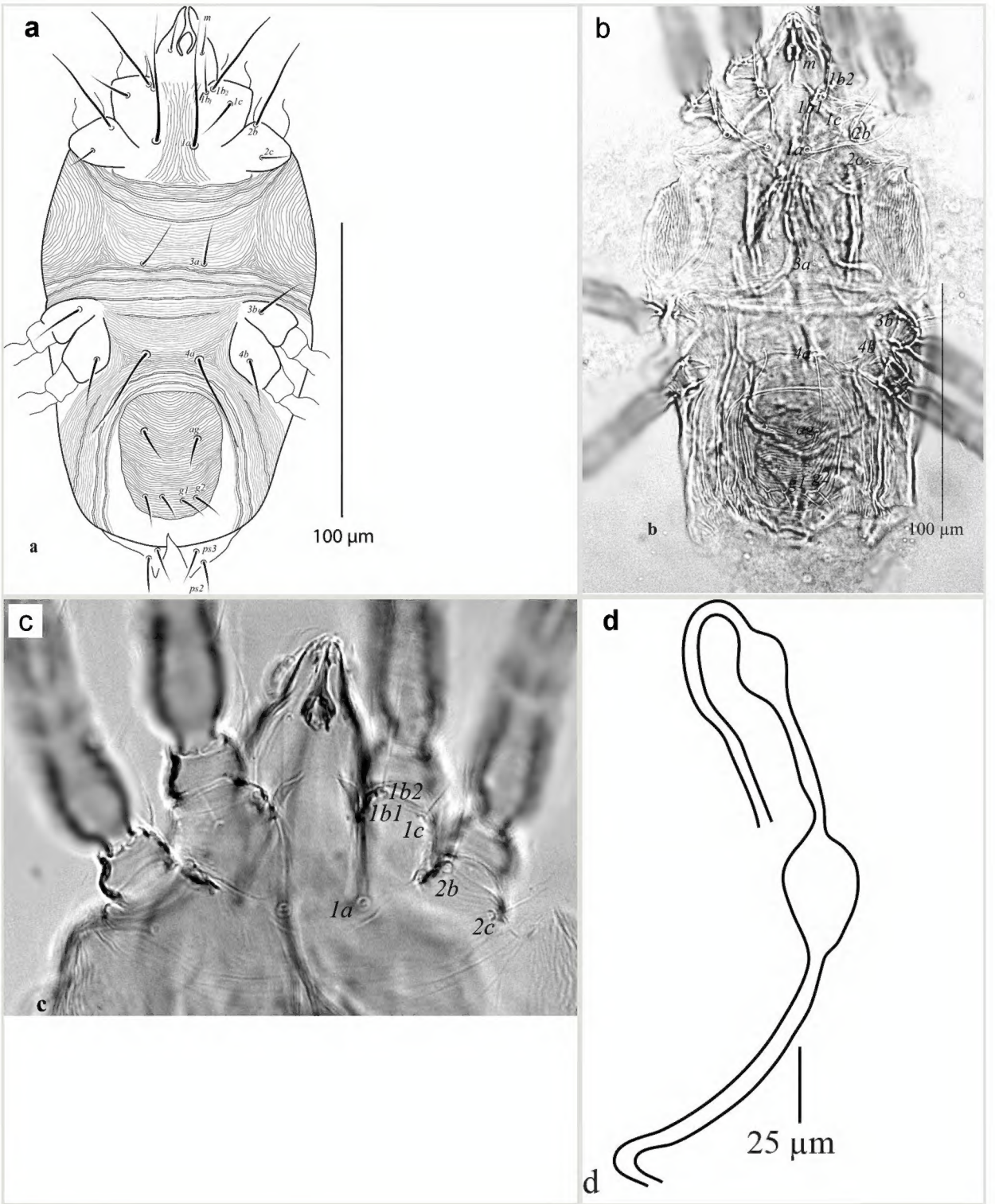


Figure 2.

Amblypalpus pisoniae sp. nov., female, venter;

a: *Amblypalpus pisoniae* sp. nov., female, venter (Illustration); doi
b: *Amblypalpus pisoniae* sp. nov., female, venter (Photo); doi
c: *Amblypalpus pisoniae* sp. nov., female, coxae I and II (Photo); doi
d: *Amblypalpus pisoniae* sp. nov., female, spermatheca (Illustration). doi

Venter (Fig. 5a). Ventral cuticle with transverse striae medially, longitudinal striae laterally; genital and ventral plate fused into single plate with transverse striae; lateral area with longitudinal striae; three pairs of intercoxal setae (1*a*, 3*a*, 4*a*), with 1*a* and 4*a* longer than 3*a*; Coxa I with 3 setae ($1b_1$, $1b_2$, 1*c*); two pairs of genital setae ($g_{1–2}$) present; two pairs of anal setae ($ps_{2–3}$) present. Lengths of setae: 1*a* 41–42, $1b_1$ 13–15, $1b_2$ 33–34, 1*c* 11–14, 2*b* 33–40, 2*c* 13–16, 3*a* 11–13, 3*b* 13–15, 4*a* 60–63, 4*b* 14–15, *ag* 10 10–11, g_1 9–11, g_2 10–11, ps_2 7–9, ps_3 7–11. Ventral setae smooth. Aedeagus as figured (Fig. 5b).

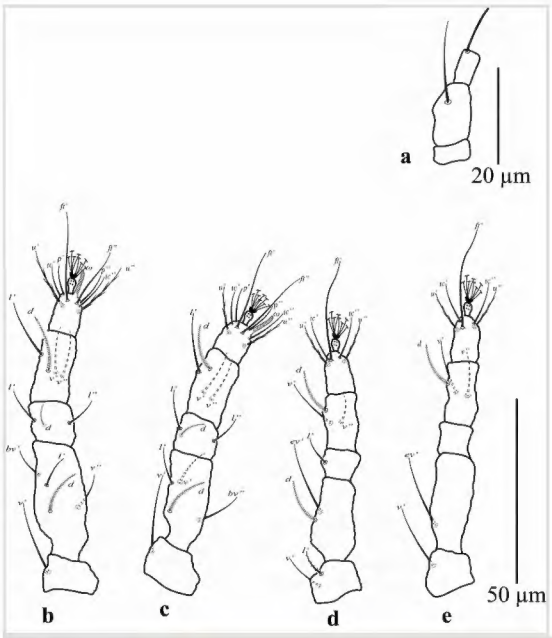
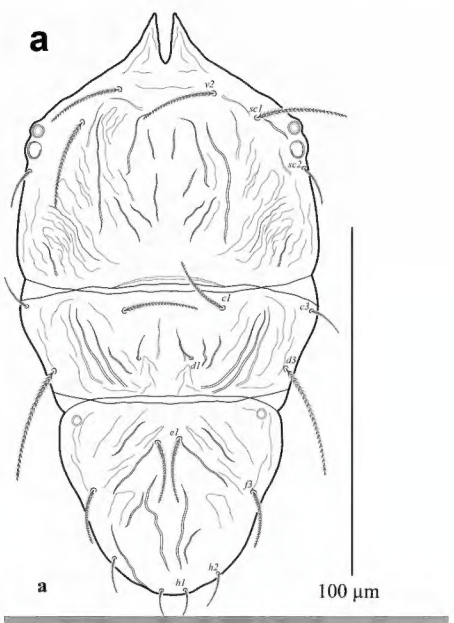


Figure 3. doi

Amblypalpus pisoniae sp. nov., female; **a** palp; **b** leg I; **c** leg II; **d** leg III; **e** leg IV.



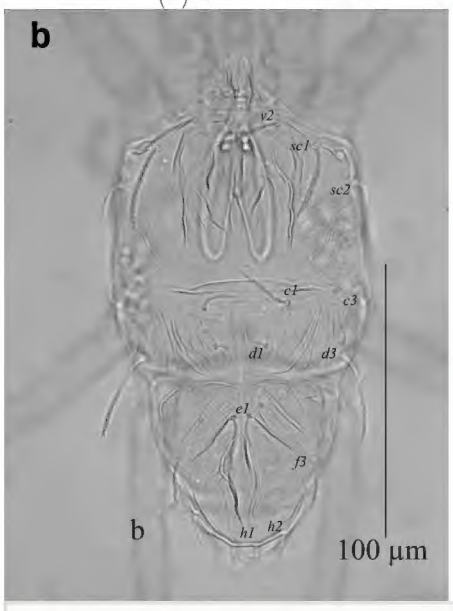


Figure 4.

Amblypalpus pisoniae sp. nov., male, dorsum:

a: *Amblypalpus pisoniae* sp. nov., male, dorsum (Illustration); doi

b: *Amblypalpus pisoniae* sp. nov., male, dorsum (Photo). doi

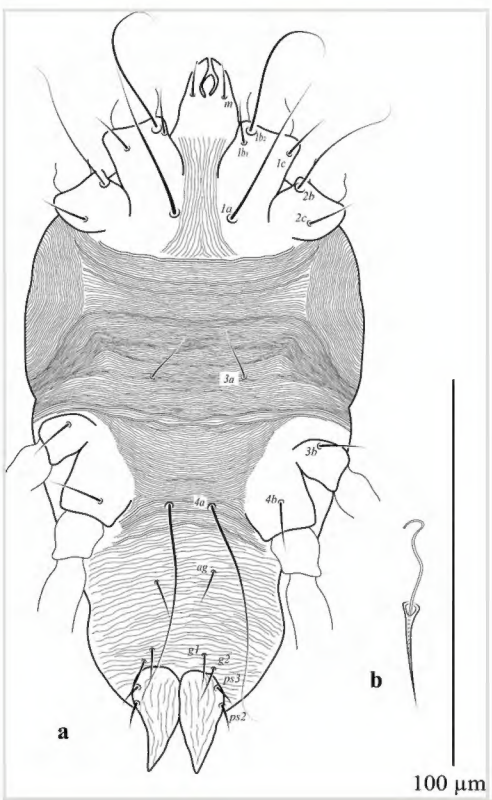


Figure 5. doi

Amblypalpus pisoniae sp. nov., male. **a** venter; **b** aedeagus.

Gnathosoma. Ventral setae *m* 10 (10–12); distance between setae *m–m* 12–13. Palp (Fig. 6f). Three segments; terminal segment with single eupathidium setae 7–12, second segment with one dorsal seta.

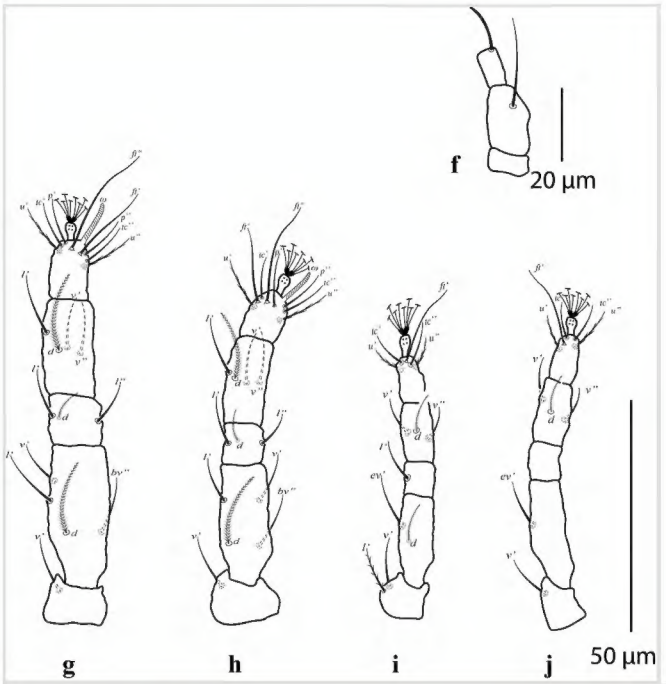


Figure 6. doi

Amblypalpus pisoniae sp. nov., male. **f** palp; **g** leg I; **h** leg II; **i** leg III; **j** leg IV.

Legs (Fig. 6g-j): Legs measured from trochanter to tarsus; leg I 84 (79–84); leg II 69 (69–74); leg III 66 (66–69) and leg IV 77 (77–80). Number of setae on leg I-IV similar to female legs.

Immature stages. Not found

Etymology: The specific epithet (*pisoniae*) is derived from the host plant genus *Pisonia* from which the type specimen was collected.

Genus diagnosis: Type species: *Amblypalpus narsikulovi* Mitrofanov & Strunkova, 1978 - Mitrofanov and Strunkova 1978: 1097.

Updated diagnosis after Farzan et al. (2013)

Palps 3-segmented; palp tarsus with 1–2 terminal phaneres; anterior margin of prodorsum with broad flat projection extending medially and laterally over base of coxa I or projection absent; opisthosoma with 7–9 pairs of setae (c_2, d_2, e_2, f_2, absent; c_1, e_3, f_3 present or absent); dorsal setae fine; leg cuticle not heavily sculptured; genital and ventral shield weakly developed or not at all defined; metapodal shields absent; two pairs of pseudoanal setae ($ps_{2–3}$), anal plate poorly defined, setae ps_2 not on tubercle, $ps_{2–3}$ inserted longitudinally on anal plates; tibiae I–II with 4 or 5 setae; tarsal claws and empodia pad-like. Spermatheca with at least one subterminal bulb.

Diagnosis: Propodosoma with anterior median projection deeply notched, rostral shield present; opisthosma with setae c_1, c_3, d_1, d_3, e_1, f_3, h_1 and h_2 present and setae e_3 and f_2 absent, all dorsal setae fine, serrate, moderately short, with v_2, sc_1, c_1 the longest; dorsal idiosoma with irregular mostly fine striation; genital and ventral region fused with fine transverse striae; genu III with one seta; tibiae I and II with four setae; palp three segmented, distal segment with single eupathidium.

Remarks: The new species belongs to *Amblypalpus* sensu lato. The new species *Amblypalpus pisoniae* sp. nov. is closely related to *A. iraniensis* Farzan, Asadi & Ueckerman, 2013 because both have palp with three segments, dorsum striated; genua I and II, femora I and II each with three and four setae, respectively. However, the new species can be distinguished from *A. iraniensis* by seta e_3 absent (vs. seta e_3 present); anterior medial propodosoma projection deeply notched (vs. anterior medial propodosoma projection reduced); seta c_1 short, not reaching basis of seta d_1 (vs. c_1 crossing far away basis of seta d_1); genito-ventral plate striated (vs. genito-ventral plate smooth); genu III with one seta (vs. genu III without seta) tibiae I and II, each with four setae (vs. tibiae I and II, each with five setae in *A. iraniensis*).

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